

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): A process ~~Process~~ for the production of nonporous spherical SiO₂ particles by hydrolytic polycondensation of tetraalkoxysilanes and/or organotrialkoxysilanes, ~~characterised in that the~~ said process comprising:
conducting said hydrolytic polycondensation of tetraalkoxysilanes and/or organotrialkoxysilanes ~~is carried out~~ in a medium comprising water, one or more solubilizers, solubilisers and aminoethanol or ethylenediamine one or more amines.
2. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ a sol of primary particles is first ~~firstly~~ produced, and the resultant SiO₂ particles are subsequently brought to the desired particle size in such a way that further nucleation is prevented by continuous metered addition of corresponding silane controlled to the extent of reaction.
3. (Cancelled):
4. (Currently Amended): A process ~~Process~~ according to Claim 1, characterised in that the amine is an alkanolamine, diamine, polyamine and/or primary alkylamine wherein said medium contains aminoethanol.
5. (Currently Amended): A process ~~Process~~ according to Claim 1 [[4]], wherein said medium contains characterised in that the amine is aminoethanol, ethylenediamine, octylamine or diethylenetriamine.
6. (Currently Amended): A process ~~Process~~ according to Claim 1 ~~Claim 1~~, wherein characterised in that the proportion of ethanolamine or ethylenediamine ~~the amine in~~ the medium is from 0.1 to 5% by weight, ~~preferably from 0.5 to 2% by weight~~.

7. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the one or more solubilizers ~~solubilisers~~ are in each case an alcohol, a ketone, a dialkyl sulfoxide, a pyrrolidone, an alkyl nitrile, a furan, or a dioxane ~~selected from the group consisting of alcohols, ketones, dialkyl sulfoxides, pyrrolidones, alkyl nitriles, furans and/or dioxanes.~~

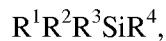
8. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the alkoxy group of the tetraalkoxysilane is in each case a methoxy, ethoxy, propoxy, butoxy or pentoxy group, ~~preferably an ethoxy group.~~

9. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the hydrolytic polycondensation is carried out at temperatures between 25 and 78°C, ~~preferably between 30 and 75°C and in particular between 40 and 55°C.~~

10. (Currently Amended): A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ one or more dyes are additionally added to the medium during the hydrolytic polycondensation.

11. (Currently Amended): A process ~~Process~~ according to Claim 10, wherein said ~~characterised in that~~ the dye is a fluorescent dye.

12. (Currently Amended): A process ~~Process~~ according to Claim 10, wherein said ~~characterised in that~~ the dye is a terminally silylated (fluorescent) dye of the ~~general~~ formula:



in which

R^1 , R^2 and R^3 are identical or different and stand for halogen atoms, alkyl, aryl, alkoxy or silyloxy groups, ~~and~~

R^4 has the complex structure $A^1 - B_m - C_n - A^2$, ~~in which~~

m and n ~~are each~~ can adopt the values zero or and 1,

A^1 ~~is~~ denotes an alkylene alkyl chain or a heteroanalogous structure, preferably having

~~from 1 to 30 chain members,~~

B ~~is~~ stands for a functional sequence,

C ~~is~~ denotes a bifunctional organic sequence having a chain or ring structure which is linked to A², ~~in a suitable manner and in which~~

A² ~~is~~ stands for a fluorophoric system or a dye molecule which is bonded structurally ~~offers the possibility of bonding~~ to C or, if n is equal to zero, is bonded to B or, if m and n are both equal to zero, is bonded to A¹.

13. (Currently Amended): A process ~~Process~~ according to Claim 12, ~~wherein characterised in that~~ the functional sequence B in R⁴ ~~is~~ stands for carbonyl, oxycarbonyl, aminocarbonyl, or aminothiocarbonyl, groups or a hetero atom, for example oxygen, nitrogen or sulfur.

14. (Currently Amended): A process ~~Process~~ according to Claim 12, ~~wherein characterised in that~~ the bifunctional sequence C in R⁴ ~~is~~ preferably stands for an alkylene unit, a ~~or~~ for substituted alkylene unit, or a ~~and~~ heteroanalogous alkylene unit, groups which ~~in each case is~~ are linked to A² via a carbon, nitrogen, oxygen or sulfur atom, for example as an ester or amide.

15. (Currently Amended): A process ~~Process~~ according to Claim 12, ~~wherein characterised in that~~ the bifunctional sequence C in R⁴ ~~is~~ a stands for structural elements of hydroxy- or aminocarboxylic acid radical, or an ester or amide acids and esters or amides thereof.

16. (Currently Amended): A process ~~Process~~ according to Claim 12, ~~wherein characterised in that~~ the alkoxy group is a methoxy, ethoxy, propoxy, butoxy or pentoxy group, preferably an ethoxy group.

17. (Currently Amended): A powder ~~Powder~~ consisting of spherical SiO₂ particles obtainable ~~a process by one of the processes~~ according to Claim 1.

18. (Currently Amended): A powder ~~Powder~~ according to Claim 17, wherein characterised in that the SiO₂ particles have a mean particle diameter of between 0.05 and 10 µm.

19. (Currently Amended): A material for use ~~Use of powders consisting of SiO₂ particles, produced according to Claim 1,~~ as sorption material in chromatography, ~~for the in~~ isolation and purification of nucleic acids and proteins, in phagocytosis analyses, as constituents in diagnostic arrays, as solid phases for the investigation of molecular recognition phenomena, and as solid phases in heterogeneously catalysed processes, as a component of photonic crystals, and as lubricants and/or polishing agents, wherein said material is a product obtained by the process according to claim 1.

20. (New): A process according to Claim 1, wherein the proportion of amino-ethanol or ethylenediamine the amine in the medium is from 0.5 to 2% by weight.

21. (New): A process according to Claim 1, wherein the proportion of amino-ethanol or ethylenediamine the amine in the medium is from 0.5 to 3% by weight.

22. (New): A process according to Claim 1, wherein the hydrolytic polycondensation is carried out at temperatures between 30 and 75°C

23. (New): A process according to Claim 1, wherein the hydrolytic polycondensation is carried out at temperatures between 40 and 55°C.

24. (New): A process according to Claim 13, wherein the functional sequence B in R⁴ is carbonyl, oxycarbonyl, aminocarbonyl, aminothiocarbonyl, oxygen, nitrogen or sulfur.

25. (New): A process according to Claim 12, wherein m is 1, and the functional sequence B in R⁴ is carbonyl, oxycarbonyl, aminocarbonyl, aminothiocarbonyl, or a hetero atom.

26. (New): A process according to Claim 12, wherein n is 1, and the bifunctional sequence C in R⁴ is a hydroxy- or aminocarboxylic acid radical, or an ester or amide thereof.

27. (New): A process according to Claim 1, wherein said medium contains 2 – 25 % by weight water, 0.1-5 % by weight ethanolamine or ethylenediamine, 70-90 % by weight solubilizers, and 2-40 % by weight tetraalkoxysilne, based on the total weight of the medium.

28. (New): A process according to Claim 1, wherein said medium contains 2 – 25 % by weight water, 0.5-3 % by weight ethanolamine or ethylenediamine, 70-90 % by weight solubilizers, and 5-15 % by weight tetraalkoxysilne, based on the total weight of the medium.